

## **Remarks**

Claims 1-3, 5, 7-48, 50-64 are currently pending. Reconsideration of the pending claims as amended is respectfully requested.

Claims 1-44 and 51-56 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The Examiner felt that it was unclear what statutory category independent claims 1, 36 and 51 belong to i.e. system, apparatus, etc. These claims were accordingly rejected under 35 USC 101. Claims 1-56 were further rejected under 35 USC 101 because the Examiner felt that a reasonable interpretation of the claims would not result in any useful, concrete or tangible product. Claims 1, 36 and 51 have been amended to overcome these rejections.

Claims 1-5, 7-9, 35-38 and 45-49 were rejected under 35 U.S.C. 102(b) as being anticipated by Upadhyaya ('A Simulation Model for Availability Under Battlefield Conditions', 2000). Claims 6 and 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Upadhyaya in view of Srinivasan ('Availability of Weapon Systems with Logistic Delays: A Simulation Approach' 2003).

Claims 1 and 45 as amended recite updating "a time-based prediction of weapons stockpile and operational availability, maintenance activities, and spare parts stock over a life cycle of the weapons system." The Upadhyaya and Srinivasan references are directed at simulations limited to high intensity conflicts or battle and thus limited to "operational availability" and the spare parts and maintenance activities to support operational availability. As shown in Figures 3-5 of Upadhyaya, a perfect 1.0 availability is assumed at the beginning of the battle, which lasts approximately 60 days. Upadhyaya's model includes Monte Carlo methods applying different probability distributions for failure times due to battle damage and system unreliability, and for repair times. The simulation results indicate transient fluctuations in availability within one or two weeks of battle. Applicant's claimed DES system is directed at "stockpile and operational availability .... over a life cycle of the weapons system". Analysis of a weapon 'life cycle' using claimed DES system differs from Upadhyaya's analysis of a 'battle period', as the battle analysis is concerned primarily with availability in a single battle environment during the operational state only. Thus Upadhyaya simplifies his analysis with the initial assumption of 'perfect' (1.0) availability at the beginning of the battle, when that value is always degraded (sometimes significantly) by support aspects (maintenance policy, test frequency and effectiveness, environments encountered, etc..) effective throughout the life cycle.

Upadhyaya's model is devoid of any teaching of methods applicable over the 'life cycle' of the weapons system or to stockpile availability. Accordingly, Applicant requests that the rejection of claims 1 and 45 be withdrawn.

Claims 3, 37 and 47 are directed to attributes such as MTBF, TTF Variate and Duty Cycle having a plurality of values for different environments. Upadhyaya '2 Methodology' simulation model 2 does not teach this. The Upadhyaya and Srinivasan models are essentially the same. In section 2 Methodology, assumption 4 Srinivasan clearly states that the model considers only single failures, and thus the attributes cannot have a plurality of values for different environments.

Claims 7 and 59 are directed to the DES system providing a library of common blocks including all of BIT, Stockpile Availability, Observe  $A_0$ , Operational Availability, Warranty Check, Set Failure Variates, Service Life Check and Parts Spares. The DES system includes each of these common blocks. For a given SUP, the static objects may be selected to use any combination of these common blocks. Claims 8 and 9 similarly recite that the library includes common attributes for the common blocks and a library of sub-models. Upadhyaya and Srinivasan do not teach using a library of common blocks and specifically do not teach a library containing each of the listed common blocks.

Claims 10 and 50 recite that the DES system (or method) include Set Failure Variates and BIT common blocks and at least one of Stockpile Availability, Observe  $A_0$  and Operational Availability, Warranty Check, Service Life Check and Parts Spares and the dynamic objects have common attributes including at least Duty Cycle, TTF variate, BitDetectable and MTBF. This minimum combination of common blocks and common attributes is not taught by the cited art of record.

#### **Allowable Subject Matter**

Claims 10-34, 39-43 and 50 were objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all the limitations of the base and any intervening claims. Accordingly, claim 36 has been amended to include the limitations of original claim 10. Claims 39-43 have been rewritten in independent form to include the relevant limitations of base claim 36. Based on the allowability of claims 39-43, Applicant contends that claims 11-22 and 60-64 are also allowable.

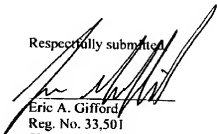
Claim 51 and claims 52-56 as dependent thereon would be allowable if rewritten or amended to overcome the rejections under 35 USC 112, 2<sup>nd</sup> paragraph and 35 USC 101, set for in the Office Action. Claim 51 has been so amended. Based on the reasons for allowance of claim 51, Applicant contends that claims 57-58 are also allowable.

**Conclusion**

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below listed telephone number if, in the opinion of the Examiner, such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,



Eric A. Gifford  
Reg. No. 33,501  
520 760-1754 Phone

Date: March 1, 2007

ATTORNEY FOR APPLICANTS

Noblitt & Gilmore, LCC  
Technology and Intellectual Property Law  
4800 North Scottsdale Road, Suite 6000  
Scottsdale, Arizona  
Tel 480 994-9859